

Week-03-L-03

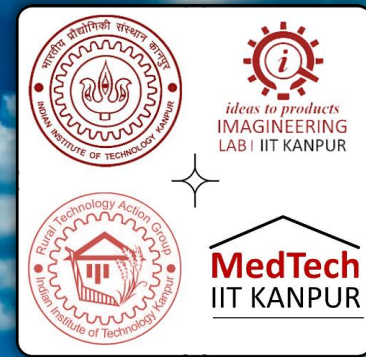
Value Engineering Agricultural Plan

Function Phase Continuation

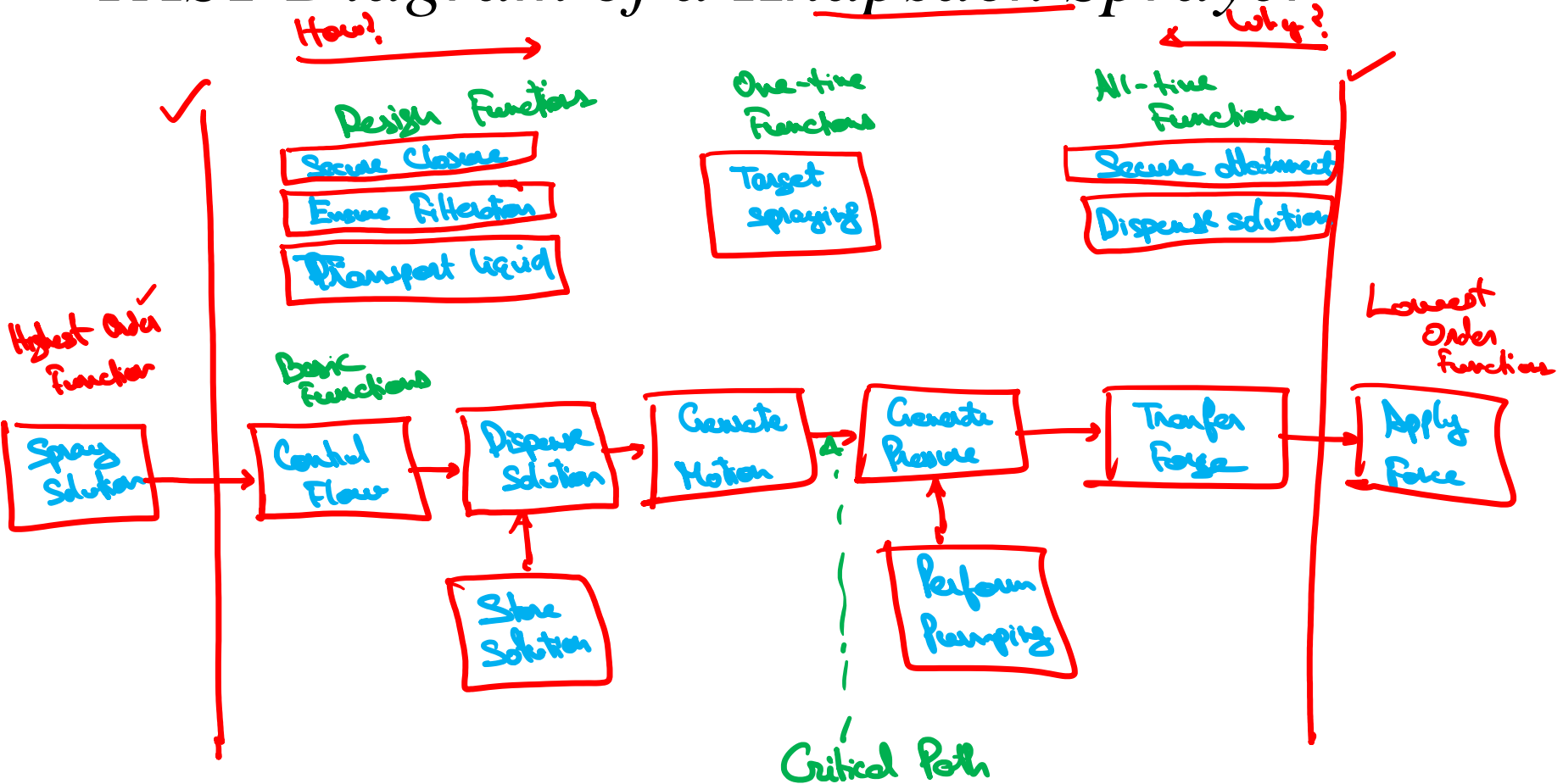
Numerical Evaluation of Functions

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FAST Diagram of a Knapsack Sprayer



Why to use FAST Diagram?

1. Understanding Complex Systems
2. Problem Solving : Break-down a complex problem
3. Communication : Common visual language
4. Project Planning : Plan and schedule
5. Optimizing Processes:
6. Decision-Making : Informed decisions

Numerical Evaluation of Functions

- Paired comparison matrix systematically compares alternatives or criteria for decision-making.
- Prioritizes and ranks options based on various attributes or factors.
- Evaluates pairs of functions to determine relative importance and variation.
- Establishes priorities based on assessed functions or criteria.

Numerical Evaluation of Functions

A

	B	C	D	Total. Wt	% Wt
A	A3	A1		2 4 ^{x_i}	$\frac{K_i}{\sum K_i} \times 100$
B				3 3 (5)	
C				1 5	
D				4 2	
				<u>$\sum K_i =$</u>	100%

Evaluation Weight Factor (Difference in Importance)	
1 ✓	Minor Difference
2 ✓	Medium Difference
3 ✓	Major Difference

How it works?

• Here's how a paired comparison matrix works in value engineering:

1. ✓ List of Alternatives or Criteria

2. ✓ Comparison in Pairs

3. ✓ Scoring or Ranking 1-3 3-5

4. ✓ Completion of the Matrix

5. ✓ Aggregation and Analysis

6. ✓ Decision Making

Numerical Evaluation for Knapsack Sprayer

Key Letters	Functions
A ✓	Store Solution
B	Secure Closure
C	Generate Pressure
D	Transport Solution
E	Control Flow
F	Target Spraying
G	Spray Solution
H	Perform Pumping
I	Secure Attachment
J	Ensure Filter
K	Generate Motion
L	Transfer Force
M	Dispense Solution
N ✓	Apply Force

	B	C	D	E	F	G	H	I	J	K	L	M	N	T	Adj Wt	% Wt
A	1	1														
B																
C																
D																
E																
F																
G																
H																
I																
J																
K																
L																
M																
N																

Evaluation Weight Factor (Difference in Importance)	
1 ✓	Minor Difference
2 ✓	Medium Difference
3 ✓	Major Difference

1
5
9

1
3
5

Thank You

